

## ABSTRACT OF THE DISCLOSURE

A rate control method with region of interesting support, which coding macroblocks in a current picture with different priority. The rate control method calculates a weighted macroblock activity according to the priority and a macroblock activity and a picture activity for the current picture according to the weighted macroblock activity. Then, the method allocates a bit budget for each macroblock according to the priority and calculates an estimated complexity for the current picture according to a complexity of a previously coded picture, an activity of the previously coded picture and the weighted macroblock activity.

10 The method also calculates an estimated quantizer scale according to the estimated complexity and the bit budget, an initial virtual buffer occupancy according to an reaction factor and the estimated quantizer scale and a macroblock quantizer scale according to a virtual buffer occupancy of a previously coded macroblock, the priority and the reaction factor. The method codes each

15 macroblock according to the macroblock quantizer scale and updates a virtual buffer occupancy of the current coded macroblock according to a used bit of the coded macroblock, the virtual buffer occupancy of the previously coded macroblock and the bit budget of current coded macroblock.